

CLAIMS

1. A semiconductor light emitting device comprising:
a base body;
a selection mask formed on the base body, the selection mask defining a stripe-
5 shaped opening having long-sides;
a semiconductor layer formed by selective growth from the opening such as to
have a ridge line substantially parallel to the long-sides of the opening; and
a first conductive type cladding layer, an active layer, and a second conductive
type cladding layer formed on the semiconductor layer.
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2. A semiconductor light emitting device according to claim 1, wherein
the second conductive type cladding layer is formed on a pair of crystal planes located
on both sides of the ridge line, and an electrode is formed on only a region of the
second conductive type cladding layer.
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3. A semiconductor light emitting device according to claim 1, wherein
the second conductive type cladding layer is formed on a pair of crystal planes located
on both sides of the ridge line, and an electrode is formed in a region of the second
conductive type cladding layer that excludes a portion near the ridge line.
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4. A semiconductor light emitting device according to claim 1, wherein
the second conductive type cladding layer is formed on a pair of crystal planes located
on both sides of the ridge line, and an electrode is formed only in a region of the
second conductive type cladding layer that is located on the pair of crystal planes and
25 which has regular crystal steps.
5. A semiconductor light emitting device according to claim 1, wherein
the semiconductor layer is a wurtzite type compound semiconductor layer, and each of
a pair of crystal planes located on both the sides of said ridge line is one of a (1-101)
30 plane and a (11-22) plane.

6. A semiconductor light emitting device according to claim 5, wherein the wurtzite type compound semiconductor layer is a GaN based compound semiconductor layer.

5 7. A semiconductor light emitting device according to claim 1, wherein the semiconductor light emitting device is one of a semiconductor laser and a light emitting diode.

8. A semiconductor light emitting device, comprising:
10 a base body;
a selection mask formed on the base body, the selection mask defining a stripe-shaped opening extending with a longitudinal direction taken as one of a (1-100) direction and a (11-20) direction;
a semiconductor layer formed by selective growth from the opening such as to
15 have a ridge line substantially parallel to the longitudinal direction of the opening; and
a first conductive type cladding layer, an active layer, and a second conductive type cladding layer, which are formed on the semiconductor layer.

9. A semiconductor light emitting device comprising:
20 a base body;
a selection mask formed on the base body the selection mask defining a stripe-shaped opening extending with a longitudinal direction taken as a direction tilted from one of a (1-100) direction and a (11-20) direction by an angle ranging from about 0.2° to about 20°;
25 a semiconductor layer formed by selective growth from the opening such as to have a ridge line substantially parallel to the longitudinal direction of the opening; and
a first conductive type cladding layer, an active layer, and a second conductive type cladding layer, which are formed on the semiconductor layer.

30 10. A display unit including an array of a plurality of semiconductor light emitting devices, each device comprising:
a base body;

a selection mask formed in the base body the selection mask defining a stripe-shaped opening having long-sides;

a semiconductor layer formed by selective growth from the opening such as to have a ridge line substantially parallel to the long-sides of the opening; and

5 a first conductive type cladding layer, an active layer, and a second conductive type cladding layer, which are formed on the semiconductor layer.

11. A method of fabricating a semiconductor light emitting device, the method comprising the steps of:

10 forming a selection mask, defining a stripe-shaped opening having long-sides on a base body;

forming a semiconductor layer by selective growth from the opening such that the semiconductor layer has a ridge line substantially parallel to the long-sides of the opening; and

15 forming a first conductive type cladding layer, an active layer, and a second conductive type cladding layer on the semiconductor layer.

12. A method of fabricating a semiconductor light emitting device according to claim 11, further comprising a step of forming an electrode on the second
20 conductive type cladding layer, which is formed on a pair of crystal planes located on both sides of said ridge line, such as to be located only in a region on the pair of crystal planes.

13. A method of fabricating a semiconductor laser, the method
25 comprising the steps of:

forming a selection mask defining a stripe-shaped opening having long-sides on a base body;

forming a semiconductor layer by selective growth from the opening such that the semiconductor layer has a ridge line substantially parallel to the long-sides of the
30 opening;

forming a first conductive type cladding layer, an active layer, and a second conductive type cladding layer on the semiconductor layer;

forming an electrode on the second conductive type cladding layer, which is formed on a pair of crystal planes located on both sides of the ridge line, such as to be located only in a region on the pair of crystal planes; and

forming resonance planes along end portions of the electrode by cleavage.